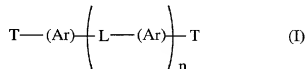


What is claimed is:

1. A lubricating oil composition comprising a major amount of an oil of lubricating viscosity; a minor amount of a high molecular weight, nitrogen-containing dispersant; and a minor amount of an oligomer of the formula:



wherein each Ar independently represents an aromatic moiety selected from polynuclear carbocyclic moieties, mononuclear heterocyclic moieties and polynuclear heterocyclic moieties, said aromatic moiety being optionally substituted by 1 to 6 substituents selected from H, -OR<sub>1</sub>, -N(R<sub>1</sub>)<sub>2</sub>, F, Cl, Br, I, -(L-(Ar)-T), -S(O)<sub>w</sub>R<sub>1</sub>, -(CZ)<sub>x</sub>-(Z)<sub>y</sub>-R<sub>1</sub> and -(Z)<sub>y</sub>-(CZ)<sub>x</sub>-R<sub>1</sub>, wherein w is 0 to 3, each Z is independently O, -N(R<sub>1</sub>)<sub>2</sub> or S, x and y are independently 0 or 1 and each R<sub>1</sub> is independently H or a linear or branched, saturated or unsaturated hydrocarbyl group having from 1 to about 200 carbon atoms, optionally mono- or poly-substituted with one or more groups selected from -OR<sub>2</sub>, -N(R<sub>2</sub>)<sub>2</sub>, F, Cl, Br, I, -S(O)<sub>w</sub>R<sub>2</sub>, -(CZ)<sub>x</sub>-(Z)<sub>y</sub>-R<sub>2</sub> and -(Z)<sub>y</sub>-(CZ)<sub>x</sub>-R<sub>2</sub>, wherein w, x, y and Z are as defined above and R<sub>2</sub> is a hydrocarbyl group having 1 to about 200 carbon atoms;

each L is independently a linking moiety comprising a carbon-carbon single bond or a linking group;

each T is independently H, OR<sub>1</sub>, N(R<sub>1</sub>)<sub>2</sub>, F, Cl, Br, I, -S(O)<sub>w</sub>R<sub>1</sub>, (CZ)<sub>x</sub>-(Z)<sub>y</sub>-R<sub>1</sub> or (Z)<sub>y</sub>-(CZ)<sub>x</sub>-R<sub>1</sub>, wherein R<sub>1</sub>, w, x, y and Z are as defined above; and

n is 2 to about 1000;

wherein at least 25% of aromatic moieties (Ar) are connected to at least 2 linking moieties (L) and a ratio of the total number of aliphatic carbon atoms in the oligomer to the total number of aromatic ring atoms in aromatic moieties (Ar) is from about 0.10:1 to about 40:1.

2. The lubricating oil composition of claim 1, wherein said ratio of the total number of aliphatic carbon atoms in the oligomer to the total number of aromatic ring atoms in aromatic moieties (Ar) is from about 4:1 to about 7:1.

3. The lubricating oil composition of claim 1, wherein at least 60% of aromatic moieties (Ar) are substituted.

4 The lubricating oil composition of claim 1, wherein hydrocarbyl groups R<sub>1</sub> and R<sub>2</sub> have from 1 to about 30 carbon atoms.

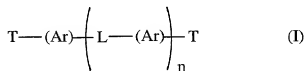
5 The lubricating oil composition of claim 1, wherein each of said linking moieties (L) is independently selected from an alkylene linkage, an ether linkage, an ester linkage, an anhydride linkage, an ether-acyl linkage, an ether ester linkage, an acyl-ester linkage, an amino linkage, an amido linkage, a carbamido linkage, a urethane linkage and a sulfur linkage, each of the linkage groups being optionally mono- or polysubstituted with OR<sub>1</sub>, N(R<sub>1</sub>)<sub>2</sub>, F, Cl, Br, I, S(O)<sub>w</sub>R<sub>1</sub>, (CZ)<sub>x</sub>-(Z)<sub>y</sub>-R<sub>1</sub> or (Z)<sub>y</sub>-(CZ)<sub>x</sub>-R<sub>1</sub>, wherein w, Z and R<sub>1</sub> are as defined in claim 1.

6 The lubricating oil composition of claim 5, wherein said linkage moieties are selected from alkylene linkages -CH<sub>2</sub>CHC(CH<sub>3</sub>)<sub>2</sub>- and -C(CH<sub>3</sub>)<sub>2</sub>-, diacyl linkages-COCO- and -CO(CH<sub>2</sub>)<sub>4</sub>CO-, and sulfur linkages -S<sub>1</sub> and -S<sub>2</sub>-.

7 The lubricating oil composition of claim 1, wherein aromatic moiety (Ar) is selected from naphthalene and quinoline.

8 The lubricating oil composition of claim 1, wherein said high molecular weight dispersant is present in an amount providing from about 0.008 to about 0.32 wt. % of nitrogen, and said oligomer is present in an amount of from about 0.005 to about 10 wt. %, based on the total weight of lubricating oil composition.

9 An oligomer of the formula:



wherein each Ar independently represents an aromatic moiety selected from polynuclear carbocyclic moieties, mononuclear heterocyclic moieties and polynuclear heterocyclic moieties, said aromatic moiety being optionally substituted by 1 to 6 substituents selected from H, -OR<sub>4</sub>, -N(R<sub>4</sub>)<sub>2</sub>, F, Cl, Br, I, -(L-(Ar)-T), -S(O)<sub>w</sub>R<sub>4</sub>, -(CZ)<sub>x</sub>-(Z)<sub>y</sub>-R<sub>4</sub> and -(Z)<sub>y</sub>-(CZ)<sub>x</sub>-R<sub>4</sub>, wherein w is 0 to 3, each Z is independently O, -N(R<sub>4</sub>)<sub>2</sub> or S, x and y are independently 0 or 1 and each R<sub>4</sub> is independently H, methyl, ethyl, propyl or a branched hydrocarbyl group having 3 to 200 carbon atoms, optionally mono- or poly-substituted with one or more groups

selected from  $-\text{OR}_4$ ,  $-\text{N}(\text{R}_4)_2$ , F, Cl, Br, I,  $-\text{S}(\text{O})_w\text{R}_4$ ,  $-(\text{CZ})_x-(\text{Z})_y-\text{R}_4$  and  $-(\text{Z})_y-(\text{CZ})_x-\text{R}_4$ ,

wherein w, x, y  $\text{R}_4$  and Z are as defined above;

each L is independently a linking moiety comprising a carbon-carbon single bond or a linking group;

each T is independently H,  $\text{OR}_1$ ,  $\text{N}(\text{R}_4)_2$ , F, Cl, Br, I,  $\text{S}(\text{O})_w\text{R}_4$ ,  $(\text{CZ})_x-(\text{Z})_y-\text{R}_4$  or  $(\text{Z})_y-(\text{CZ})_x-\text{R}_4$ , wherein  $\text{R}_4$ , w, x, y and Z are as defined above; and

n is 2 to about 1000;

wherein at least 25% of aromatic moieties (Ar) are connected to at least 2 linking moieties (L) and a ratio of the total number of aliphatic carbon atoms in the oligomer to the total number of aromatic ring atoms in aromatic moieties (Ar) is from about 0.10:1 to about 40:1.

10. The oligomer of claim 9, wherein said ratio of the total number of aliphatic carbon atoms in the oligomer to the total number of aromatic ring atoms in aromatic moieties (Ar) is from about 4:1 to about 7:1.

11. The oligomer of claim 9, wherein at least 60% of aromatic moieties (Ar) are substituted.

12. The oligomer of claim 9, wherein hydrocarbyl groups  $\text{R}_4$  and  $\text{R}_5$  have from 1 to about 30 carbon atoms.

13. The oligomer of claim 9, wherein each of said linking moieties (L) is independently selected from an alkylene linkage, an ether linkage, an ester linkage, an anhydride linkage, an ether-acyl linkage, an ether ester linkage, an acyl-ester linkage, an amino linkage, an amido linkage, a carbamido linkage, a urethane linkage and a sulfur linkage, each of the linkage groups being optionally mono- or polysubstituted with  $\text{OR}_1$ ,  $\text{N}(\text{R}_1)_2$ , F, Cl, Br, I,  $\text{S}(\text{O})_w\text{R}_1$ ,  $(\text{CZ})_x-(\text{Z})_y-\text{R}_1$  or  $(\text{Z})_y-(\text{CZ})_x-\text{R}_1$ , wherein w, Z and  $\text{R}_1$  are as defined in claim 1.

14. The oligomer of claim 13, wherein said linkage moieties are selected from alkylene linkages  $-\text{CH}_2\text{CHC}(\text{CH}_3)_2-$  and  $-\text{C}(\text{CH}_3)_2-$ , diacyl linkages  $-\text{COCO}-$  and  $-\text{CO}(\text{CH}_2)_4\text{CO}-$ , and sulfur linkages  $-\text{S}_1-$  and  $-\text{S}_2-$ .

15. The oligomer of claim 9, wherein aromatic moiety (Ar) is selected from naphthalene and quinoline.